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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,577	12/03/2003	Sukeyuki Shinotsuka	7272-132/ 10314101	2295
167 7590 11/28/2007 FULBRIGHT AND JAWORSKI LLP 555 S. FLOWER STREET, 41ST FLOOR LOS ANGELES, CA 90071			EXAMINER HSU, AMY R	
			ART UNIT 2622	PAPER NUMBER
			MAIL DATE 11/28/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/729,577

Applicant(s)

SHINOTSUKA, SUKEYUKI

Examiner

Amy Hsu

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 14-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6 is/are allowed.
- 6) ☒ Claim(s) 14 and 15 is/are rejected.
- 7) ☒ Claim(s) 16-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, filed 9/18/2007, with respect to the rejection(s) of claim(s) 1-22 under 35 USC §112 and 35 USC §103 have been fully considered and are persuasive. Therefore, the rejections of Claims 1-22 are withdrawn and moot in view of the new rejection. This Office Action is Non-Final and meant to replace the Non-Final Office Action (mailed May 18, 2007).

Allowable Subject Matter

2. Claims 1-6 allowed.

3. The following is a statement of reasons for the indication of allowable subject matter: The closest prior art teaches an image sensor array where each line is divided into groups of pixels, with a first scanning means for sequentially reading out pixel sensor signals on a group by group basis and temporarily storing the signals and a second scanning means for reading out pixel sensor signals on a pixel by pixel basis from each group. However, the prior art fails to teach the first scanning means with a pixel selecting circuit for providing signals for selecting pixels on a line by line basis and the second scanning means with a pixel selecting circuit for selecting pixels on a block by block, or group by group basis.

2. Claim 16-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dierickx (US 7106915) in view of Shinotsuka et al. (US 6191408).

Regarding Claim 14, Dierickx teaches a method of scanning the pixels of an image sensor (*Col 3 Lines 20-21*) comprised of a matrix of solid-state light sensor elements (*Col 5 Lines 62-63*), each of which represents a unit pixel and is capable of reading out in a time series sensor signals of respective pixels (*Col 5 Lines 64-66*) by sequentially selecting pixel lines one by one and sequentially selecting sensor signals one by one in a selected pixel line (*Fig. 4 line selection register selects pixel lines and reference number 4 is an X register for selecting pixels one by one in a selected line*), comprising the steps of dividing each of the pixel lines into a plurality of blocks with each block composed of a specified number of pixels (*Col 12 Lines 3-7 teaches a first group and a second group within a first single row, and Col 11 Lines 1-3 teaches each row has n pixels in my groups*), first scanning the pixels for sequentially reading out pixel sensor signals on a block-by-block basis starting from a first block (*Col 4 shows that*

within one line, reference number 8, half of the line is a first block of pixels within the line are scanned), temporally storing the pixel sensor signals of a readout block (Fig. 4 reference number 13 is a buffer for temporally storing pixel sensors of the first block of pixels within the line), then scanning the pixels for sequentially reading out pixel sensor signals on a pixel-by-pixel basis from a selected block (Fig. 4 reference number 4 is a scanning means for scanning the pixels on a pixel by pixel basis), but fails to teach converting a pixel sensor signal scanned in the first scanning step into a voltage value by using a reference resistance with a bias voltage applied.

Shinotsuka teaches a photo sensor signal processing apparatus which uses a resistance with a bias voltage applied, to convert the sensor current signal from the pixel sensor to a voltage signal (*Col 5 Lines 9-11 and Fig. 2*).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Dierickx with that of Shinotsuka because converting the pixel sensor signal to voltage by using a reference resistance will decrease variation from pixel to pixel since the resistance stays constant with voltage applied by a bias voltage.

Regarding Claim 15, Dierickx teaches a method as defined in claim 14, characterized in that the duration of a pixel selecting signal provided by the first scanning step corresponds to a time necessary for selecting pixels of one block. Fig. 5 shows a time axis with respective blocks showing relative time for reading out of pixel groups. The pixel selecting signal from the first step is for selecting

a group or block in a line, this corresponds to the time necessary for selecting pixels of the block as represented by the box marked "A Pixels read-out" which is the time for reading out the pixels of group A.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fossum et al. (US 7092021) teaches an apparatus comprising a controller for controlling multiple groups of pixels and for reading out values corresponding to the charge collected by different groups of pixels at different times.

Steinebach (US 6687026) teaches an optical sensor having a first group of odd sensor elements and a second group of even sensor elements where each is associated with a control.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy Hsu whose telephone number is 571-270-3012. The examiner can normally be reached on M-F 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on 571-272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Amy Hsu
Examiner
Art Unit 2622

ARH 11/25/2007

A handwritten signature in black ink, appearing to read 'Lin Ye', with a stylized flourish extending to the right.

LIN YE
SUPERVISORY PATENT EXAMINER